

## 9.2 Výstup z návrhu FVE

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### 9.2.1 1.ETAPA – VARIANTA A



Amazon Court, Karolinská 661/4, 186 00 Prague 8  
Czech Republic

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STUDIE PROVEDITELNOSTI  
MODERNIZACE KALOVÉHO A ENERGETICKÉHO HOSPODÁŘSTVÍ ÚČOV

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NÁZEV PŘÍLOHY  
VÝSTUP Z NÁVRHU FVE

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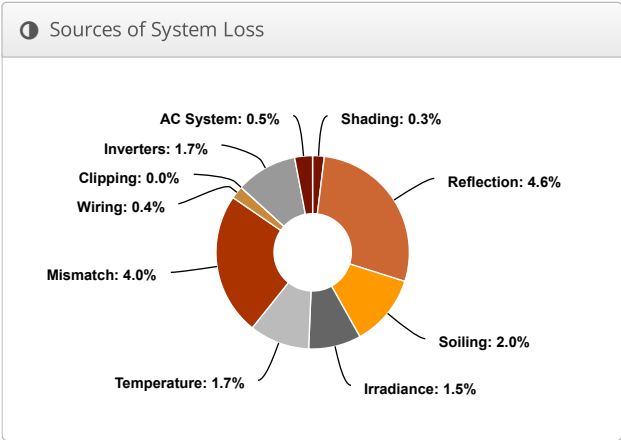
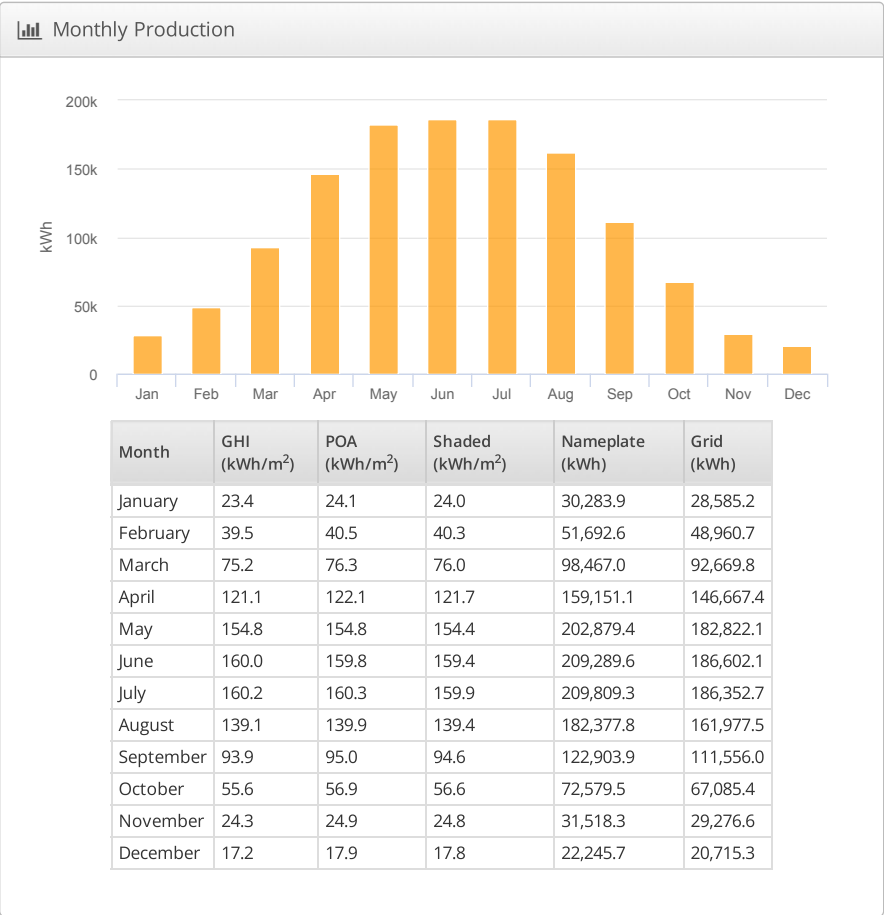
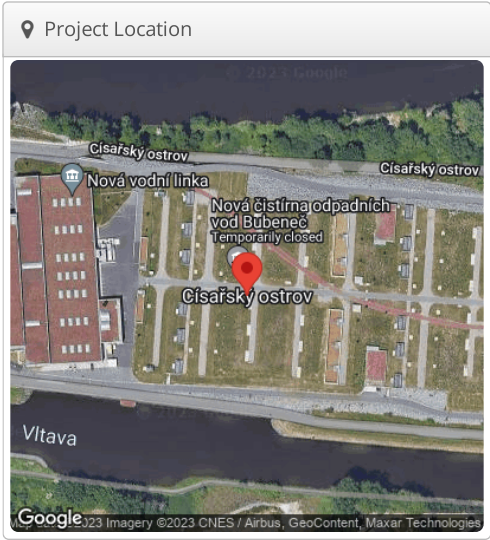
MĚŘÍTKO  
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Č. PŘÍLOHY  
9.2.1

# Design 1 ČOV Císařský ostrov, Císařský ostrov

Report	
Project Name	ČOV Císařský ostrov
Project Address	Císařský ostrov
Prepared By	SPV1 Photon Energy it@photonenergy.com

System Metrics	
Design	Design 1
Module DC Nameplate	1.39 MW
Inverter AC Nameplate	1.41 MW Load Ratio: 0.99
Annual Production	1.263 GWh
Performance Ratio	84.5%
kWh/kWp	905.8
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)
Simulator Version	65abda0128-d0531e05fa-88d9e374c3-10904ea752



⚡ Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,064.4	
	POA Irradiance	1,072.4	0.8%
	Shaded Irradiance	1,069.0	-0.3%
	Irradiance after Reflection	1,019.3	-4.6%
	Irradiance after Soiling	998.9	-2.0%
	Total Collector Irradiance	998.9	0.0%
Energy (kWh)	Nameplate	1,393,198.0	
	Output at Irradiance Levels	1,372,847.3	-1.5%
	Output at Cell Temperature Derate	1,349,858.7	-1.7%
	Output After Mismatch	1,296,311.3	-4.0%
	Optimal DC Output	1,291,666.7	-0.4%
	Constrained DC Output	1,291,657.2	0.0%
	Inverter Output	1,269,618.8	-1.7%
	Energy to Grid	1,263,270.7	-0.5%
Temperature Metrics			
Avg. Operating Ambient Temp		12.5 °C	
Avg. Operating Cell Temp		19.2 °C	
Simulation Metrics			
		Operating Hours	4553
		Solved Hours	4553

☁ Condition Set												
Description	Condition Set 1											
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type				a		b		Temperature Delta			
	Fixed Tilt				-3.56		-0.075		3°C			
	Flush Mount				-2.81		-0.0455		0°C			
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Trackers	Maximum Angle							Backtracking				
	60°							Enabled				
Module Characterizations	Module					Uploaded By		Characterization				
	JKM460M-60HL4-V (Jinko Solar)					HelioScope		Spec Sheet Characterization, PAN				
Component Characterizations	Device			Uploaded By				Characterization				

📦 Components		
Component	Name	Count
Inverters	SUN2000-33KTL-A (Huawei)	4 (120.0 kW)
Inverters	SUN2000-30KTL-M3 (Huawei)	1 (33.0 kW)
Inverters	SUN2000-12KTL-M2 (Huawei)	1 (12.0 kW)
Inverters	SUN2000-20KTL-M2 (Huawei)	4 (80.0 kW)
Inverters	SUN2000-36KTL-M3 (400V) (2022) (Huawei)	4 (144.0 kW)
Inverters	SUN2000-20KTL-M2 (400V) (Huawei)	1 (20.0 kW)
Inverters	SUN2000-50KTL-M3 (400V) (Huawei)	6 (300.0 kW)
Inverters	SUN2000-100KTL-M2 (400V) (Huawei)	7 (700.0 kW)
Strings	10 AWG (Copper)	151 (6,398.9 m)
Module	Jinko Solar, JKM460M-60HL4-V (460W)	3,032 (1.39 MW)

🔌 Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	5-23	Along Racking
Wiring Zone 2	-	6-23	Along Racking
Wiring Zone 3	-	6-23	Along Racking
Wiring Zone 4	-	6-23	Along Racking
Wiring Zone 5	-	6-23	Along Racking
Wiring Zone 6	-	5-23	Along Racking
Wiring Zone 7	-	-	Along Racking
Wiring Zone 8	-	15-23	Along Racking
Wiring Zone 9	-	6-23	Along Racking
Wiring Zone 10	-	-	Along Racking
Wiring Zone 11	-	-	Along Racking
Wiring Zone 12	-	-	Along Racking
Wiring Zone 13	-	-	Along Racking
Wiring Zone 14	-	-	Along Racking
Wiring Zone 15	-	6-23	Along Racking
Wiring Zone 16	-	5-23	Along Racking
Wiring Zone 17	-	-	Along Racking
Wiring Zone 18	-	15-23	Along Racking
Wiring Zone 19	-	6-23	Along Racking
Wiring Zone 20	-	6-23	Along Racking
Wiring Zone 21	-	5-23	Along Racking
Wiring Zone 22	-	15-23	Along Racking

<div>  Field Segments         </div>									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
12	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	50	100	46.0 kW
11	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	50	100	46.0 kW
13	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	50	100	46.0 kW
14	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	50	100	46.0 kW
10	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	40	80	36.8 kW
18	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	80	160	73.6 kW
17	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	60	120	55.2 kW
16	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	40	80	36.8 kW
24	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	35	70	32.2 kW
20	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	27	54	24.8 kW
21	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	27	54	24.8 kW
22	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	27	54	24.8 kW
19	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	58	116	53.4 kW
23	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	12	24	11.0 kW
9	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	28	56	25.8 kW
8	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	3	6	2.76 kW
7	East-West	Landscape (Horizontal)	0°	155°	0.5 m	1x1	28	56	25.8 kW
30	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	189	378	173.9 kW
27	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	126	252	115.9 kW
26	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	59	118	54.3 kW
28	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	79	158	72.7 kW
29	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	20	40	18.4 kW
35	East-West	Landscape (Horizontal)	0°	161.41307°	0.2 m	1x1	12	24	11.0 kW
34	East-West	Landscape (Horizontal)	0°	161.41307°	0.2 m	1x1	12	24	11.0 kW
40	Flush Mount	Landscape (Horizontal)	23°	222.61406°	0.0 m	1x1	46	46	21.2 kW
41	Flush Mount	Portrait (Vertical)	23°	222.61406°	0.0 m	1x1	153	153	70.4 kW
3	Flush Mount	Landscape (Horizontal)	15°	220.93242°	0.0 m	1x1	24	24	11.0 kW
1	Flush Mount	Portrait (Vertical)	15°	223.91908°	0.0 m	1x1	42	42	19.3 kW

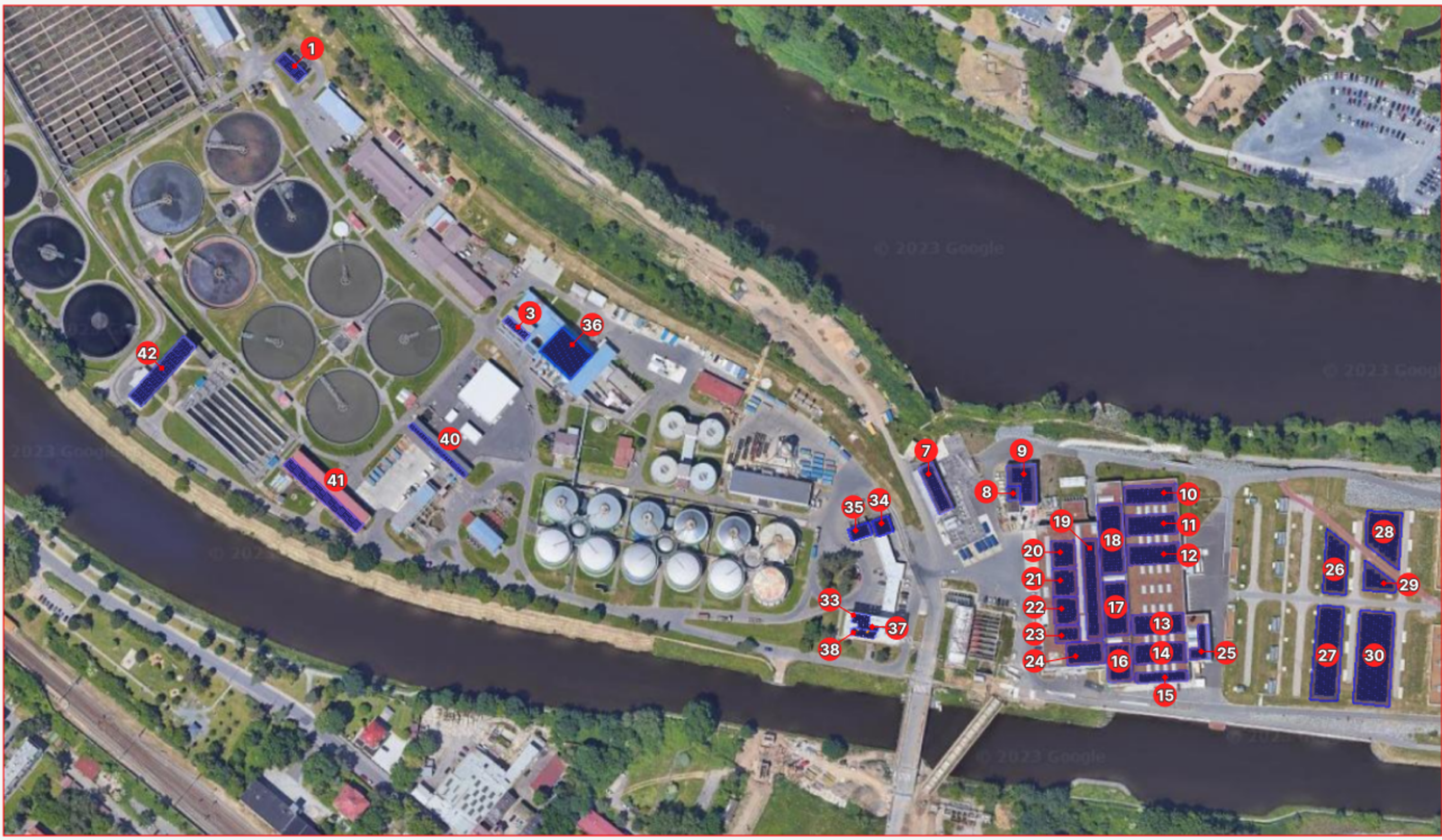
42	East-West	Landscape (Horizontal)	15°	132.42664°	0.4 m	1x1	72	144	66.2 kW
15	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	20	40	18.4 kW
25	East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	14	28	12.9 kW
33	Flush Mount	Landscape (Horizontal)	0°	9.045801°	0.0 m	1x1	20	20	9.20 kW
37	Flush Mount	Landscape (Horizontal)	0°	190.09106°	0.0 m	1x1	12	12	5.52 kW
38	Flush Mount	Landscape (Horizontal)	0°	190.09106°	0.0 m	1x1	19	19	8.74 kW
36	Flush Mount	Landscape (Horizontal)	0°	222.4949°	0.0 m	1x1	180	180	82.8 kW



 Detailed Layout









Č. plochy	Název objektu ÚČOV	Vhodnost umístění FVE	Poznámka	Racking	Orientace	Sklon %	GPS lokace	Intrarow	Velikost rámu	Rámy	Moduly	Nominální výkon
1	PTS1, č.parc. 1959/2	ANO		Flush Mount	Portrait (Vertical)	15°	223.91908°	0.0 m	1x1	42	42	19,30 kW
3	EGC-střecha nad RS7795, č.parc. 1953/1	ANO		Flush Mount	Landscape (Horizontal)	15°	220.93242°	0.0 m	1x1	24	24	11,00 kW
7	HČS, č.parc. 1961/19	ANO		East-West	Landscape (Horizontal)	0°	155°	0.5 m	1x1	28	56	25,80 kW
8	HP EF, č.parc. 1961/16	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	3	6	2,76 kW
9	HP EF, č.parc. 1961/16	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	28	56	25,80 kW
10	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	40	80	36,80 kW
11	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	50	100	46,00 kW
12	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	50	100	46,00 kW
13	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	50	100	46,00 kW
14	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	50	100	46,00 kW
15	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	20	40	18,40 kW
16	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	40	80	36,80 kW
17	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	60	120	55,20 kW
18	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	80	160	73,60 kW
19	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	58	116	53,40 kW
20	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	27	54	24,80 kW
21	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	27	54	24,80 kW
22	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	27	54	24,80 kW
23	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	12	24	11,00 kW
24	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	35	70	32,20 kW
25	NVL-SO04	ANO		East-West	Landscape (Horizontal)	0°	177.07753°	0.5 m	1x1	14	28	12,90 kW
26	NVL-SO06	MOŽNÁ, PO OPATŘENÍCH	veřejně přístupná část zelené střechy NVL, nutná bezpečnostní ochrana FVP	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	59	118	54,30 kW
27	NVL-SO06	MOŽNÁ, PO OPATŘENÍCH	veřejně přístupná část zelené střechy NVL, nutná bezpečnostní ochrana FVP	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	126	252	115,90 kW
28	NVL-SO06	MOŽNÁ, PO OPATŘENÍCH	veřejně přístupná část zelené střechy NVL, nutná bezpečnostní ochrana FVP	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	79	158	72,70 kW
29	NVL-SO06	MOŽNÁ, PO OPATŘENÍCH	veřejně přístupná část zelené střechy NVL, nutná bezpečnostní ochrana FVP	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	20	40	18,40 kW
30	NVL-SO06	MOŽNÁ, PO OPATŘENÍCH	veřejně přístupná část zelené střechy NVL, nutná bezpečnostní ochrana FVP	East-West	Landscape (Horizontal)	0°	274.51398°	0.2 m	1x1	189	378	173,90 kW
33	AB-hlavní budova, č.parc 1952/1	ANO	střecha hlavní části administrativní budovy, celk. plocha střechy cca 450 m2	Flush Mount	Landscape (Horizontal)	0°	190.09106°	0.0 m	1x1	20	20	9,2 kW
34	PTS4Č.PARC.1952 /1	ANO		East-West	Landscape (Horizontal)	0°	161.41307°	0.0 m	1x1	12	24	11 kW
35	PTS4Č.PARC.1952 /1	ANO		East-West	Landscape (Horizontal)	0°	161.41307°	0.0 m	1x1	12	24	11 kW
37	AB-hlavní budova, č.parc 1952/1	ANO	střecha hlavní části administrativní budovy, celk. plocha střechy cca 450 m2	Flush Mount	Landscape (Horizontal)	0°	190.09106°	0.0 m	1x1	12	12	5,5 kW
38	AB-hlavní budova, č.parc 1952/1	ANO	střecha hlavní části administrativní budovy, celk. plocha střechy cca 450 m2	Flush Mount	Landscape (Horizontal)	0°	190.09106°	0.0 m	1x1	19	19	8,7 kW
36	EGC-střecha strojovny KGJ, č.parc. 1953/1	ANO	celk. plocha střechy cca 500 m2	Flush Mount	Landscape (Horizontal)	0°	222.61406°	0.2 m	1x1	180	180	82,7 kW
40	mistrovna, č.parc.1954	ANO		Flush Mount	Landscape (Horizontal)	23°	222.61406°	0.0 m	1x1	46	46	21,20 kW
41	česlovna, č.parc. 1956/2	MOŽNÁ, PO OPATŘENÍCH	bude dotčeno stavbou 12G6500-rekonstrukce stáv. vodní linky, umístění vyžaduje změnu PD stavby	Flush Mount	Portrait (Vertical)	23°	222.61406°	0.0 m	1x1	153	153	70,40 kW
42	písk. jímky, č.parc. 1956/1	MOŽNÁ, PO OPATŘENÍCH	bude dotčeno stavbou 12G6500-rekonstrukce stáv. vodní linky, umístění vyžaduje změnu PD stavby	East-West	Landscape (Horizontal)	15°	132.42664°	0.4 m	1x1	72	144	66,20 kW
									<b>Celkem:</b>	1764	3032	1394 kW